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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,385	09/02/2004	Ichiro Okajima	14434.0076USWO	1687

7590 08/15/2008  
Hamre, Schumann, Mueller & Larson, P.C.  
P.O. Box 2902-0902  
Minneapolis, MN 55402

EXAMINER
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FUQUA, SHAWNTINA T

ART UNIT	PAPER NUMBER
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3742

MAIL DATE	DELIVERY MODE
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08/15/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/506,385	<b>Applicant(s)</b> OKAJIMA ET AL.	
	<b>Examiner</b> SHAWNTINA FUQUA	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/3/04, 11/27/06</u> .                                       | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the abstract contains more than 150 words. In addition, line 1 contains the implied phrase "The present invention is intended to provide", and lines 9 and 13 contain the implied phrase "in the present invention". Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP57-041763 in view of JP2002-001581 and JP2002-011593.

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JP57-041763 discloses a glass article with a metal member joined thereto comprising an electroconductive coating film formed on a surface of the glass article by baking silver paste that includes Ag particle and a glass frit wherein the joining plane of the metal member is fixed onto the electroconductive coating film with a solder, the coating film is a defogger, and wherein a cable is connected to a connection part of the metal member and the cable and the coating film are connected electrically to each other (page 1, left column, line 34-right column, line 14).

JP57-041763 does not disclose a lead free solder alloy containing Sn and at least 1.5% or between 2-4% mass of Ag. JP2002-001581 discloses a lead free solder containing Sn and Ag and JP2002-011593 discloses a lead free solder between 2-3%. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the Sn-Ag lead free solder of JP2002-001581 along with the 2-3% Ag of JP2002-011593 in the glass article of JP57-041763 because, a Sn-Ag lead free solder containing 2-3% mass of Ag allows for a more stable electrical connection.

5. Claims 4-11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP57-041763 in view of JP2002-001581 and JP2002-011593 as applied to claim 1 above, and further in view of JP6-058557 and JP61-037182.

JP57-041763 in view of JP2002-001581 and JP2002-011593 discloses all of the recited subject matter except a metal terminal with a leg part and two joining planes and a connection part that projects upward, a total area of the joining planes in a range of 37-50 or 40-45 mm<sup>2</sup>. JP6-058557 discloses a metal terminal with two joining planes (Figure 1) and JP61-037182 discloses a metal terminal with two joining planes and a connection part that projects upward from the leg part (Figure 3) and a total area of the joining planes in the range of 37-50 or 40-45

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mm<sup>2</sup> (Figure 5A-C). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the metal terminal of JP6-058557 and metal terminal and total area of JP61-037182 in the glass article of JP57-041763 along with the Sn-Ag lead free solder of JP2002-001581 containing 2-3% mass of Ag because, a metal terminal with two joining planes and a connection part that projects upward from the leg part allows along with a changing the total area of the joined surfaces improves joining strength and allows for a more stable electrical connection.

While none of the prior art references disclose a volume of the lead free solder, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a volume of the lead free solder alloy 1-2 times the product of an area of the joining plane to ensure that a suitable amount of solder has been poured to ensure a sound electrical connection between the metal piece and the glass article.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHAWNTINA FUQUA whose telephone number is (571)272-4779. The examiner can normally be reached on Monday-Friday 8-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

stf  
August 13, 2008

/Shawntina Fuqua/  
Primary Examiner, Art Unit 3742